19. The method according to claim 12, further comprising: synthesizing a spacer to be covalently bonded between "AP" and active substance.

REMARKS

A marked-up version of amended claims is included herewith in Appendix A and a clean copy of all pending claims is included in Appendix B.

It is requested that the examination and prosecution of this application proceed on the basis of these amended claims 1-19.

Respectfully submitted,

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APPENDIX A

In the Specification

Please insert on page 1, between the title of the application and the first paragraph, the following new paragraph:

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is filed under the provisions of 35 U. S.C. §371 and claims the priority of International Patent Application No. PCT/DE00/02346 filed July 14, 2000, which in turn claims priority of German Patent Application No. 199 33 492.7 filed July 16, 1999.

In the Claims

Please amend claims 3, 5, 7-9, 11 -12, 14-15 and 17 to read as follows:

3. The conjugate according to claim 1 [or 2], wherein the transport mediator is a member selected from the group consisting of: a penetratin, a penetratin derivative, transportan or parts thereof, bacterial transport protein and [derived from the penetratin family or is transportan or parts thereof or is a bacterial or] viral transport protein.

5. The conjugate according to claim 1 [any one of the preceding claims], wherein the cell-specific, compartment-specific or membrane-specific address protein or peptide is selected from the group consisting of:

for import into the ER H_3N^+-Met-Met-Ser-Phe-Val-Ser-Leu-Leu-Leu-Val-Gly-Ile-Leu-Phe-Trp-Ala-Thr-Glu-Ala-Glu-Gln-Leu-Thr-Lys-Cys-Glu-Val-Phe-Gln;

for reimport into the ER H_2N-Lys-Asp-Glu-Leu-COO^-;

for import into mitochondria H_3N^+-Met-Leu-Ser-Leu-Arg-Gln-Ser-Ile-Arg-Phe-Phe-Lys-Pro-Ala-Thr-Arg-Thr-Leu-Cys-Ser-Ser-Arg-Tyr-Leu-Leu;

for import into the nucleus -Pro-Pro-Lys-Lys-Lys-Arg-Lys-Val

$H3N^+$-Pro-Lys-Lys-Lys-Arg Lys-Val-(= nuclear localization sequence from SV4Q-T antigen);

for import into peroxisomes H_2N-Ser-Lys-Leu-COO^-; and

for binding to cell membrane H_3N^+-Gly-Ser-Ser-Lys-Ser-Lys-Pro-Lys-.

7. The conjugate according to claim 1 [any one of the preceding claims, wherein the active substance is selected from the group consisting of nucleic acids, proteins/peptides and/or chemical substances.

8. The conjugate according to claim 1 [any one of the preceding claims], wherein the conjugate has the following structure:

transport mediator - address protein - active substance

9. The conjugate according to claim 1 [any one of the preceding claims], wherein a spacer is also present, if applicable.

11. The conjugate according to claim 9 [or 10], wherein the spacer is a member selected from the group consisting of: polylysine, polyethylene glycol or polyvinyl pyrrolidone.

12. A method of preparing a conjugate according to claim 1 [any one of claims 1 to 11], comprising the steps of:

1) synthesizing separate peptides [synthesis] of "P", "AP"[, and the spacer, if applicable],

2) forming a covalent bond between "AP" and active substance[, if applicable, with a spacer in between],

3) redox coupling of the product from step 2) with "P" by means of redox coupling.

14. The method according to claim 12 [or 13], wherein the redox coupling is carried out in an aqueous DMSO solution.

15. The method according to claim [any one of claims 12 to] 14, wherein a further purification step follows.

17. Use of a conjugate according to claim 1 [any one of claims 1 to 11] for the cell-specific, compartment-specific or membrane-specific transport of a desired active substance.

APPENDIX B

Specification

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is filed under the provisions of 35 U. S.C. §371 and claims the priority of International Patent Application No. PCT/DE00/02346 filed July 14, 2000, which in turn claims priority of German Patent Application No. 199 33 492.7 filed July 16, 1999.

Claims

1. A conjugate for mediating a cell-specific, compartment-specific or membrane-specific transport, wherein the conjugate comprises the following components:

a transport mediator for the cell membrane,

a cell-specific, compartment-specific or membrane-specific address protein or peptide, and

an active substance to be transported.

2. The conjugate according to claim 1, wherein the transport mediator is a peptide or protein which can pass through the plasma membrane.

3. The conjugate according to claim 1, wherein the transport mediator is a member selected from the group consisting of: a penetratin, a penetratin derivative,

transportan or parts thereof, bacterial transport protein and viral transport protein.

4. The conjugate according to claim 3, wherein one of the penetratins has the following sequence:

NH_2-RQIKIWFQNRRMKWKK-

5. The conjugate according to claim, wherein the cell-specific, compartment-specific or membrane-specific address protein or peptide is selected from the group consisting of:

for import into the ER H_3N^+-Net-Met-Ser-Phe-Val-Ser-Leu-Leu-Leu-Val-Gly-Ile-Leu-Phe-Trp-Ala-Thr-Clu-Ala-Clu-Gln-Leu-Thr-Lys-Cys-Glu-Val-Phe-Gln;

for reimport into the ER H_2N-Lys-Asp-Glu-Leu-COO^-;

for import into mitochondria H_3N^+-Met-Leu-Ser-Leu-Arg-Gln-Ser-Ile-Arg-Phe-Phe-Lys-Pro-Ala-Thr-Arg-Thr-Leu-Cys-Ser-Ser-Arg-Tyr-Leu-Leu;

for import into the nucleus -Pro-Pro-Lys-Lys-Lys-Arg-Lys-Val

H3N^+-Pro-Lys-Lys-Lys-Arg

Lys-Val-(= nuclear localization sequence from SV4Q-T antigen);

for import into peroxisomes H_2N-Ser-Lys-Leu-COO^-; and

for binding to cell membrane H_3N^+-Gly-Ser-Ser-Lys-Ser-Lys-Pro-Lys-.

6. The conjugate according to claim 5, wherein the sequence for the import into the nucleus has the following sequence:

H_3N^+ -Pro-Lys-Lys-Lys-Arg-Lys-Val.

7. The conjugate according to claim, wherein the active substance is selected from the group consisting of nucleic acids, proteins/peptides and/or chemical substances.

8. The conjugate according to claim 1, wherein the conjugate has the following structure:

transport mediator - address protein - active substance.

9. The conjugate according to claim 1, wherein a spacer is also present, if applicable.

10. The conjugate according to claim 9, wherein the spacer is located between the address protein and the active substance.

11. The conjugate according to claim 9, wherein the spacer is a member selected from the group consisting of: polylysine, polyethylene glycol or polyvinyl pyrrolidone.

12. A method of preparing a conjugate according to claim 1, comprising the steps of:

1) synthesizing separate peptides of "P", "AP",

2) forming a covalent bond between "AP" and active substance,

3) redox coupling of the product from step 2) with "P" by means of redox coupling.

13. The method according to claim 12, wherein the peptide synthesis is carried out according to the known Merrifield method.

14. The method according to claim 12, wherein the redox coupling is carried out in an aqueous DMSO solution.

15. The method according to claim 14, wherein a further purification step follows.

16. The method according to claim 15, wherein purification takes place by means of HPLC.

17. Use of a conjugate according to claim 1 for the cell-specific, compartment-specific or membrane-specific transport of a desired active substance.

18. Use according to claim 17 for use in diagnosis and/or therapy.

19. The method according to claim 12, further comprising: synthesizing a spacer to be covalently bonded between "AP" and active substance.